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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,002	12/27/2004	Yoshiyuki Hashimoto	Q85618	7484

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EXAMINER	
NORRIS, JEREMY C	

ART UNIT	PAPER NUMBER
2841	

DATE MAILED: 07/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/519,002	HASHIMOTO ET AL.	
	Examiner	Art Unit	
	Jeremy C. Norris	2841	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 July 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 July 2005* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *07/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

The drawings are objected to because the sectional views are not properly cross-hatched (see MPEP 608.02). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:
(1) if a machine or apparatus, its organization and operation;
(2) if an article, its method of making;
(3) if a chemical compound, its identity and use;
(4) if a mixture, its ingredients;
(5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because of the use of the phrase "There is provided". Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 5-11 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,727,310 (Casson).

Casson discloses, referring primarily to figures 1 & 2, a circuit board unit comprising: a first substrate (70) including, on a surface thereof, a first group of electrode terminals (72, col. 10, lines 5-20) arranged in a matrix; a second substrate (75) including, on a surface thereof, a second group of electrode terminals arranged in a matrix in alignment with said first group of electrode terminals (col. 18, lines 40-55); and an anisotropic electrical conductor (95) sandwiched between said first and second substrates, wherein said first substrate, said anisotropic electrical conductor, and said second substrate are caused to make close contact with one another in a pressurized condition to electrically connect said first group of electrode terminals and said second group of electrode terminals to each other (col. 18, lines 40-55) [claim 1], wherein each of electrode terminals in said first and second groups of electrode terminals is formed with at least one via-hole (near reference 85), at least one wire extends from said first

and second groups of electrode terminals through said via-hole and inner layers or a lower surface of said first substrate, and a recess caused by said via-hole is absorbed into said anisotropic electrical conductor due to elasticity thereof when said first substrate, said anisotropic electrical conductor, and said second substrate are pressurized (figure 2 and col. 19, lines 40-60) [claim 5], wherein each of electrode terminals in said first and second groups of electrode terminals is formed with at least one via-hole (near reference 85), at least one wire extends from said first and second groups of electrode terminals through said via-hole and inner layers or a lower surface of said first substrate (figure 2 and col. 19, lines 40-60), said each of electrode terminals has a planar area (72, 76) in which said via-hole is not formed, and said each of electrode terminals makes contact with said anisotropic electrical conductor through said planar area [claim 6], wherein each of electrode terminals in said first and second groups of electrode terminals is formed with at least one via-hole (near reference 85), at least one wire extends from said first and second groups of electrode terminals through said via-hole and inner layers or a lower surface of said first substrate (figure 2 and col. 19, lines 40-60), an exposed surface of said each of electrode terminals defines a planar surface (72, 76), and said each of electrode terminals makes contact with said anisotropic electrical conductor through said exposed surface [claim 7], wherein said anisotropic electrical conductor includes either a metal wire selected from a gold wire, a copper wire, a brass wire, a phosphor bronze wire, a nickel wire, or a stainless wire as electrically conductive material, or one of metal particles, gold-plated particles, silver-plated particles and copper-plated particles (col. 12, lines 1-10) [claim 8], wherein each

of said first and second substrates is comprised of one of a multi-layered flexible circuit board, a multi-layered rigid printing circuit board, a double-sided flexible circuit board, and a double-sided rigid printing circuit board (col. 18, lines 25-40) [claim 9], further comprising an adhesive layer (85) formed on surfaces of said anisotropic electrical conductor [claim 10].

Similarly, Casson discloses, a method of connecting a first substrate (70) including, on a surface thereof, a first group of electrode terminals (72), and a second substrate (75) including, on a surface thereof, a second group of electrode terminals (76) arranged in alignment with said first group of electrode terminals, to each other (col. 18, lines 25-55), comprising: a first step of arranging an anisotropic electrical conductor (95) between said first and second substrates; and a second step of pressurizing said first substrate, said second substrate, and said anisotropic electrical conductor in a thickness-wise direction thereof to electrically connect said first group of electrode terminals and said second group of electrode terminals to each other (col. 19, lines 30-55) [claim 11].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2-4 and 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Casson in view of US 6,670,559 B2 (Centola).

Casson discloses the claimed invention as described above except Casson does not specifically state a pressurizer pressurizing said first substrate, said anisotropic electrical conductor, and said second substrate such that they make close contact with one another [claim 2]. However, Centola teaches, referring primarily to figures 4 and 9, an electromagnetic edge shield on a printed circuit board where the shield pressurizes the printed circuit board (col. 4, line 60 – col. 5, line 25). Therefore, it would have been

obvious to one of ordinary skill in the art at the time of invention to use the edge shield taught by Centola on the circuit board of Casson, which would cause the first substrate, anisotropic conductor and the second substrate to be in pressurized close contact with one another. The motivation for doing so would have been to provide a shield to prevent electromagnetic radiation from emitting from the edge of the circuit board (Centola col. 2, lines 35-40).

Additionally, the modified invention of Casson teaches, wherein said pressurizer includes a first plane (900, Centola figure 9) which makes contact with said first substrate, a second plane (bottom portion as viewed in Centola figure 9) which makes contact with said second substrate, and a third plane (vertical portion as viewed in Centola figure 9) which keeps said first and second planes in parallel with each other [claim 3], wherein said pressurizer is composed of a material having a spring characteristic (Centola col. 5, lines 20-25) [claim 4], wherein each of electrode terminals in said first and second groups of electrode terminals is formed with at least one via-hole (near reference 85), at least one wire extends from said first and second groups of electrode terminals through said via-hole and inner layers or a lower surface of said first substrate, and a recess caused by said via-hole is absorbed into said anisotropic electrical conductor due to elasticity thereof when said first substrate, said anisotropic electrical conductor, and said second substrate are pressurized (figure 2 and col. 19, lines 40-60) [claim 12], wherein each of electrode terminals in said first and second groups of electrode terminals is formed with at least one via-hole (near reference 85), at least one wire extends from said first and second groups of electrode terminals through

said via-hole and inner layers or a lower surface of said first substrate (figure 2 and col. 19, lines 40-60), said each of electrode terminals has a planar area (72, 76) in which said via-hole is not formed, and said each of electrode terminals makes contact with said anisotropic electrical conductor through said planar area [claim 13], wherein each of electrode terminals in said first and second groups of electrode terminals is formed with at least one via-hole (near reference 85), at least one wire extends from said first and second groups of electrode terminals through said via-hole and inner layers or a lower surface of said first substrate (figure 2 and col. 19, lines 40-60), an exposed surface of said each of electrode terminals defines a planar surface (72, 76), and said each of electrode terminals makes contact with said anisotropic electrical conductor through said exposed surface [claim 14], wherein said anisotropic electrical conductor includes either a metal wire selected from a gold wire, a copper wire, a brass wire, a phosphor bronze wire, a nickel wire, or a stainless wire as electrically conductive material, or one of metal particles, gold-plated particles, silver-plated particles and copper-plated particles (col. 12, lines 1-10) [claim 15], wherein each of said first and second substrates is comprised of one of a multi-layered flexible circuit board, a multi-layered rigid printing circuit board, a double-sided flexible circuit board, and a double-sided rigid printing circuit board (col. 18, lines 25-40) [claim 16], further comprising an adhesive layer (95) formed on surfaces of said anisotropic electrical conductor [claim 17].

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy C. Norris whose telephone number is 571-272-1932. The examiner can normally be reached on Monday - Friday, 9:30 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on 571-272-1957. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JCSN

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